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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/441,124	11/17/1999	HIDEAKI ONO	FUSA16.745	3879

26304	7590	10/08/2003

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EXAMINER
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ART UNIT	PAPER NUMBER
2666	9

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2003* .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22-24* is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some *   c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____ .

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 7/21/03 have been fully

considered but they are not persuasive.

In response to applicant's argument in page 12 line 21 to

page 14 line 22 that Lyons et al. in view of Balwin et al. do not

teach splitting a short-packet into short-packet portions so as

to be accommodated respectively in first and second ATM cells and

the restoration means which extracts the short packets from the

ATM cells is not persuasive because Lyons et al. in col. 2

lines 40-67 which recite implementing an ATM Adaptation Layer

(AAL) to map the services offered by the ATM network to the

services required by the application including AALs which allow

simple encapsulation of application `packets` if each packet fits

into one ATM cell; and for larger application packets, a

segmentation and reassembly (SAR) layer allows segmentation of a

`packet` at the transmitter, so each segment fits into an ATM

cell, and reassembly of the original packet from the received ATM

cells at the receiver whereby these AALs thus allow collection of

enough information to fit into one ATM <u>cell</u> payload or

segmentation of larger native mode <u>packets</u> into smaller units

such that each smaller unit fits into an ATM <u>cell</u> payload clearly

anticipate splitting a packet into packet portions so as to be

accommodated respectively in first and second ATM cells and the

restoration means which extracts the packets from the ATM cells.

Lyons et al. did not use the term "short packet;" however,

"short" is merely a relative term and Figs. 10 and 11 of the

specification show that a short packet may have a length

between 5 bytes and 67 bytes.

Specification

2.   The lengthy specification has not been checked to the extent

necessary to determine the presence of all possible minor errors.

Applicant's cooperation is requested in correcting any errors of

which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms

the basis for all obviousness rejections set forth in this Office

action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the

differences between the subject matter sought to be patented and the
prior art are such that the subject matter as a whole would have been
obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability
shall not be negatived by the manner in which the invention was made.
This application currently names joint inventors. In

considering patentability of the claims under 35 U.S.C. 103(a),

the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered

therein were made absent any evidence to the contrary. Applicant

is advised of the obligation under 37 CFR 1.56 to point out the

inventor and invention dates of each claim that was not commonly

owned at the time a later invention was made in order for the

examiner to consider the applicability of 35 U.S.C. 103[c] and

potential 35 U.S.C. 102(e), (f) or (g) prior art under 35

U.S.C. 103(a).

4.   Claims 1-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lyons et al. (6,282,196) in view of Baldwin et

al. (5,953,339).

Lyons et al. disclose nearly all the subject matter now

claimed. Note col. 6 lines 8-19 which recite the ATM processor

filling payload of ATM cells with AAL-2 packets; forming an ATM

cell whenever the payload is filled-up or a timer expires with at

least one AAL-2 packet in the payload; ATM <u>cell header processing</u>

; placing ATM cells into a transmit buffer, etc., providing ATM

cells to ATM network, receiving ATM cells from ATM network,

providing ATM <u>cell header processing</u> and error control; and

transferring AAL2 packets to AAL2/SSCS processing unit, clearly

anticipate the cell processing apparatus as in claims 1,

15, 18, 20. Further, col. 3 line 62 to col. 4 line 2 which

recite the use of the length indicator for indicating the length

of the <u>packet</u> being added to each <u>packet</u> so that the end of

variable length packets can be demarcated whereby when the value

of the LI field points beyond the end of the current ATM <u>cell,</u>

<u>the packet is split</u> between <u>cells;</u> and Col. 2 lines 40-67 which

recite ATM networks carry <u>fixed</u> size cells within the network

irrespective of the applications being carried over ATM; however

for larger application packets, a segmentation and reassembly

(SAR) layer allows segmentation of a `packet` at the transmitter,

so each segment fits into an ATM <u>cell,</u> and reassembly of the

original packet from the received ATM cells at the receiver

clearly anticipate means for splitting the packet having a length

greater than L bytes capable of being accommodated in one ATM

cell into the first and second ATM cells and cell creation means

accommodating the packet length information in a payload area of

the first ATM cell and remaining data not accommodated in the
first ATM cell in the payload area of the second ATM cell as in
claims 1, 15, 18, 20, 21; the restoration means for extracting
short packet portions accommodated in the ATM cells upon
referring to the length information as in claims 2, 15, 18,
20, 21; and the amount of significant data accommodated in the
first ATM cell being a predetermined amount and accommodating
the remaining in the second ATM cell as in claim 3. Col. 4 lines
3-12 which recite the HEC field providing error detection over
the packet header whereby packets are discarded whose headers are
corrupted clearly anticipate the restoration means detecting
absence or presence of cell discard upon comparing calculated
error code with received error correction code and detecting bit
error in data as in claim 14. Col. 6 line 59 to col. 7 line 12
which recite using sequence numbering during play-out whereby
packets are played out of the receive buffer in conjunction with
the most recent sequence number at associated time intervals,
wherein although packet 2 was lost and packet 3 was already
received before the play-out time of packet 2, a fill packet is
played-out in place of packet 2 at time interval 2 so that the
packets are not "slipped backward" and packet 7, which is already
in the buffer, but recognized to have arrived late is discarded

and col. 7 lines 41-42 which <u>discarding</u> packets currently

existing in the buffer (3, 0', 1' and 2'), and playing out

packet 3' in its correct position, for restoring the order in the

play-out process clearly anticipate restoration means detecting

absence or presence of cell discard upon referring to the

sequence-number information of the received ATM cell as in

claim 4, upon referring to the code information of the received

ATM cell as in claims 9, 19, and discarding the preserved

significant data if cell discard is detected as in claims 5, 10.

Fig. 3 which shows the sequence number field and col. 4 lines

13-40 which recite the portion of the RES field providing

application specific function whereby a different instance of

being provided to each AAL-2 user including packet <u>sequence</u>

<u>number</u> clearly anticipate the specific area being an area within

the payload of the ATM cell as in claims 6, 11, an unused area

within the ATM cell header as in claims 7, 12, and unused area

within the packet header of each cell as in claims 8, 13. Fig. 1

which shows the packet header in cell 50 and col. 3 lines 46-50

which recite the packet header comprising a <u>Length</u> Indicator (LI)

field clearly anticipate the length information as in claims

1, 15, 18, 20, 21 and the length information of the first ATM

cell being a specific value, e.g. 0, and the length information

ob the second ATM cell being that of the packet as in claims 16
and 17.

Lyons et al. did not recite the term "short packet"
associated with ATM switching as in claims 1, 15, 18, 20, 21.

Baldwin et al. teach that it is known to use the ATM switch
to transfer the extracted short packets to another ATM cell as
set forth at col. 12 lines 26-35 in the field of digital and
multiplex communications for the purpose of improving bandwidth
efficiency by using fewer but more efficient ATM connections to
carry logical link connections LLCs among multiple end points
which clearly anticipate the short packet and the ATM switch as
in claims 1, 15, 18, 20, 21. Further, col. 12 lines 26-38 recite
the ATM switch extracts short packets as a function of a length
indicator associated with the short packet.

It would have been obvious to one having ordinary skill in
the art at the time the invention was made to provide the short
packet and the ATM switch as taught by Baldwin et al. to the
system of Lyons et al. because Baldwin et al. teach the desirable
advantage of improving bandwidth efficiency by using fewer but
more efficient ATM connections to carry logical link connections
LLCs among multiple end points and said improved bandwidth

efficiency being desirable to achieve more efficient system

operation in Lyons et al.

Allowable Subject Matter

5.   Claims 22-24 are allowed.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of

rejection presented in this Office action. Accordingly, **THIS**

ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is

reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action

is set to expire THREE MONTHS from the mailing date of this

action. In the event a first reply is filed within TWO MONTHS of

the mailing date of this final action and the advisory action is

not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will expire

on the date the advisory action is mailed, and any extension fee

pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the

statutory period for reply expire later than SIX MONTHS from the date of this final action.

7.   **Any response to this final action should be mailed to:**

    Box AF

        Commissioner of Patents and Trademarks

        Washington, D.C. 20231

    or faxed to:

        (703) 872-9314, (for formal communications; please

        mark "EXPEDITED PROCEDURE")

    Or:

        (for informal or draft communications, please

        label "PROPOSED" or "DRAFT")

    Hand-delivered responses should be brought to Crystal

    Park II, 2121 Crystal Drive, Arlington. VA., Sixth

    Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick Hom whose telephone number is (703) 305-4742. The examiner's regular work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Seema S. Rao
SEEMA S. RAO   10/6/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

SH

October 4, 2003